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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,183	09/30/2003	Teruhiro Kubo	837.1972D	1251

21171 7590 11/21/2006

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EXAMINER	
MOONEY, MICHAEL P	

ART UNIT	PAPER NUMBER
2883	

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/673,183	KUBO	
	Examiner	Art Unit	
	Michael P. Mooney	2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-11,13,14,17,18,20,21,24,25,27,28,31,32 and 34* is/are rejected.

7)☒ Claim(s) *12,15,16,19,22,23,26,29,30 and 33* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/25/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 9, 11, 13-14, 17, 18, 20, 21, 24-25, 27-28, 31-32, 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Grasis et al. (6167171).

Grasis et al. teaches

a system comprising: first (col. 11 lines 37-43) and second (fig. 5) terminal apparatuses (fig. 5; col. 11 lines 37-43); and an optical fiber transmission line (e.g., the "common" going into 85) connecting said first and second terminal apparatuses; said first terminal apparatus comprising a plurality of optical transmitters (col. 11 lines 37-43; fig. 5) for outputting a plurality of optical signals having different wavelengths (col. 11 lines 37-43; fig. 5), and an optical multiplexer (col. 11 lines 37-43) for wavelength division multiplexing said plurality of optical signals and outputting resultant WDM signal light to said optical fiber transmission line; said second terminal apparatus comprising an optical demultiplexer (fig, 5) for separating WDM signal light transmitted by said optical fiber transmission line into a plurality of optical signals having different wavelengths, and a plurality of optical receivers for receiving said plurality of optical

signals (e.g., at channel ports 1-8 in fig. 5) output from said optical demultiplexer; at least one of said optical multiplexer and said optical demultiplexer comprising an optical device comprising

(fig. 5) a WDM port adapted to wavelength division multiplexing (WDM); first to N-th ports (e.g., in fig. 5 say N=8) to which first to N-th wavelengths are respectively allocated where N is an integer greater than 4, and first to fourth optical filters, wherein said first optical filter 87 coupling said WDM port (i.e., where "common" collimated signal enters 85) to said i-th (e.g., 4^{th}) port by said i-th (e.g., 4^{th}) wavelength, where i is an integer satisfying $3 \leq i \leq (N - 2)$, [e.g., say i = 4 in fig. 5 of Grasis et al.] and also

coupling said WDM port to said second optical filter (e.g., at 84) by the plural wavelengths except said i-th wavelength [e.g., the 4^{th} wavelength (WL) at "channel 4" in fig. 5 of Grasis et al.], said second optical filter coupling said first optical filter to said third optical filter by said first to (i - l)-th (e,g,, 1^{st} to 3^{rd}) wavelengths (e.g., at channels 1-3 " in fig. 5 of Grasis et al.), and also coupling said first optical filter to said fourth (e.g., at 96) optical filter by said (i + l)-th to N-th (e.g. 5^{th} to 8^{th} at channels 5-8 Grasis et al. fig. 5) wavelengths, said third optical filter (e.g., 88, 89) coupling said second optical filter (e.g., 84) to said first to (i - l)-th ports (e,g,, 1^{st} to 3^{rd} ports) respectively by said first to (i - l)-th (1^{st} to 3^{rd}) wavelengths, and said fourth optical filter (95, 96) coupling said second optical filter to said (i+ l)-th to N-th (5^{th}-8^{th} ports at channels 5-8) ports respectively by said (i + l)-th to N-th (5^{th} – 8^{th}) wavelengths (fig. 5; col. 11 lines 37-43). Thus claim 9 is met.

Claim 11 is simply the multiplexer that goes with the demultiplexer depicted in Grasis et al. fig. 5 and is taught at, e.g., col. 11 lines 37-43. Thus claim 11 is met.

Claim 13 is simply the demultiplexer depicted in Grasis et al. fig. 5. Thus claim 13 is met.

Grasis et al. teaches wherein said first optical filter comprises a bandpass filter having a passband including said i-th wavelength (e.g., fig. 5). Thus claims 14, 21, 28 are met.

Grasis et al. teaches wherein: said third optical filter comprises a plurality of bandpass filters respectively connected to said first to (i - 1)-th ports; and said fourth optical filter comprises a plurality of bandpass filters respectively connected to said (i + 1)-th to N-th ports. (e.g., fig. 5). Thus claims 17, 24, 31 are met.

Grasis et al. teaches wherein at least one of said first to fourth optical filters comprises a dielectric multilayer film (col. 9 line 33 to col. 10 line 32). Thus claims 18, 25, 32 are met.

Grasis et al. teaches a system according to claim 9, wherein the optical device further comprises: (N + 1)-th to (N + j)-th ports to which (N + 1)-th to (N + j)-th wavelengths are respectively allocated, where j is an integer greater than 2; and fifth to seventh optical filters (figs. 6-7). Thus claims 20, 27, 34 are met.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grasis et al. (6167171).

Grasis et al. teaches a system comprising: first (col. 11 lines 37-43) and second (fig. 5) terminal apparatuses (fig. 5; col. 11 lines 37-43); and an optical fiber transmission line (e.g., the "common" going into 85) connecting said first and second terminal apparatuses; said first terminal apparatus comprising a plurality of optical transmitters (col. 11 lines 37-43; fig. 5) for outputting a plurality of optical signals having different wavelengths (col. 11 lines 37-43; fig. 5), and an optical multiplexer (col. 11 lines 37-43) for wavelength division multiplexing said plurality of optical signals and outputting resultant WDM signal light to said optical fiber transmission line; said second terminal apparatus comprising an optical demultiplexer (fig, 5) for separating WDM signal light transmitted by said optical fiber transmission line into a plurality of optical signals having different wavelengths, and a plurality of optical receivers for receiving said plurality of optical signals (e.g., at channel ports 1-8 in fig. 5) output from said

optical demultiplexer; at least one of said optical multiplexer and said optical demultiplexer comprising an optical device comprising

(fig. 5) a WDM port adapted to wavelength division multiplexing (WDM); first to N-th ports (e.g., in fig. 5 say N=8) to which first to N-th wavelengths are respectively allocated where N is an integer greater than 4, and first to fourth optical filters, wherein said first optical filter 87 coupling said WDM port (i.e., where "common" collimated signal enters 85) to said i-th (e.g., 4^{th}) port by said i-th (e.g., 4^{th}) wavelength, where i is an integer satisfying $3 \leq i \leq (N - 2)$, [e.g., say i = 4 in fig. 5 of Grasis et al.] and also

coupling said WDM port to said second optical filter (e.g., at 84) by the plural wavelengths except said i-th wavelength [e.g., the 4^{th} wavelength (WL) at "channel 4" in fig. 5 of Grasis et al.], said second optical filter coupling said first optical filter to said third optical filter by said first to (i - l)-th (e,g,, 1^{st} to 3^{rd}) wavelengths (e.g., at channels 1-3 " in fig. 5 of Grasis et al.), and also coupling said first optical filter to said fourth (e.g., at 96) optical filter by said (i + l)-th to N-th (e.g. 5^{th} to 8^{th} at channels 5-8 Grasis et al. fig. 5) wavelengths, said third optical filter (e.g., 88, 89) coupling said second optical filter (e.g., 84) to said first to (i - l)-th ports (e,g,, 1^{st} to 3^{rd} ports) respectively by said first to (i - l)-th (1^{st} to 3^{rd}) wavelengths, and said fourth optical filter (95, 96) coupling said second optical filter to said (i+ l)-th to N-th (5^{th}-8^{th} ports at channels 5-8) ports respectively by said (i + l)-th to N-th (5^{th} – 8^{th}) wavelengths (fig. 5; col. 11 lines 37-43).

Although Grasis et al. does not explicitly teach "further comprising at least one optical amplifier arranged along said optical fiber transmission line" it would have been obvious to do so because it is conventionally known to use optical amplifiers at, e.g.,

repeaters along said optical fiber transmission line that connects a multiplexer and demultiplexer for the purpose of adjusting a degraded signal. Thus claim 10 is rejected.

Allowable Subject Matter

Claims 12, 15-16,19, 22-23, 26, 29-30, 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art, either alone or in combination, does not disclose or render obvious a plurality of variable attenuators, long-wave pass & short-wave pass, circulator in combination with the rest of the corresponding claim.

It is noted that each corresponding claim is allowable because the unique combination of each and every specific element stated in the said corresponding claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Mooney whose telephone number is 571-272-2422. The examiner can normally be reached during weekdays, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael P. Mooney
Examiner
Art Unit 2883

Frank G. Font
Supervisory Patent Examiner
Art Unit 2883

FGF/mpm
11/13/06